

AMENDMENTS TO THE CLAIMS

1. (Original) A retransfer printing method comprising steps of:

overlapping an ink ribbon in a belt shape having both layers of a transfer ink layer containing transfer-ink and a peel functional layer thereon, on an intermediate transfer film in a belt shape having a transfer layer thereon so as to face the transfer ink layer toward the transfer layer;

moving the ink ribbon and the intermediate transfer film together to a longitudinal direction while pressing a thermal head against the back side of the ink ribbon overlapped on the intermediate transfer film;

transferring the transfer-ink to the transfer layer by heating the thermal head corresponding to an image to be printed so as to form the image composed of the transfer-ink on the transfer layer;

adhering a part of the transfer layer corresponding to a peeling area previously designated within an area of the image to the peel functional layer by heating the thermal head corresponding to the peeling area over a predetermined temperature;

peeling off the part of the transfer layer adhered to the peel functional layer from the intermediate transfer film; and

re-transferring the transfer layer to the printing medium by the thermal transfer method, and resulting in printing the image on the printing medium,

the retransfer printing method is further characterized in that an amount of energy, which is supplied to the thermal head so as to heat the thermal head, is changed in accordance with a location of the thermal head in the peeling area and its neighboring area during the step of peeling.

2. (Original) The retransfer printing method in accordance with claim 1, wherein the amount of energy is maximized when the thermal head is positioned in the neighborhood of a boundary area of the peeling area while the thermal head relatively moves from outside the peeling area to inside the peeling area.

3. (Original) The retransfer printing method in accordance with claim 1, wherein the amount of energy is supplied to the thermal head so as to heat the thermal head and so as to maintain a temperature of the thermal head to be less than the predetermined temperature when the thermal head is positioned outside the peeling area.

4. (Original) A printing apparatus of a retransfer printing method comprising steps of:

overlapping an ink ribbon in a belt shape having both layers of a transfer ink layer containing transfer-ink and a peel functional layer thereon, on an intermediate transfer film in a belt shape having a transfer layer thereon so as to face the transfer ink layer toward the transfer layer;

moving the ink ribbon and the intermediate transfer film together to a longitudinal direction while pressing a thermal head against the back side of the ink ribbon overlapped on the intermediate transfer film;

transferring the transfer-ink to the transfer layer by heating the thermal head corresponding to an image to be printed so as to form the image composed of the transfer-ink on the transfer layer;

adhering a part of the transfer layer corresponding to a peeling area previously designated within an area of the image to the peel functional layer by heating the thermal head corresponding to the peeling area over a predetermined temperature;

peeling off the part of the transfer layer adhered to the peel functional layer from the intermediate transfer film; and

re-transferring the transfer layer to the printing medium by the thermal transfer method, and resulting in printing the image on the printing medium,

wherein an amount of energy, which is supplied to the thermal head so as to heat the thermal head, is changed in accordance with a location of the thermal head in the peeling area and its neighboring area during the step of peeling,

the printing apparatus comprising a control section for controlling the amount of energy supplied to the thermal head by a predetermined control pattern during the step of peeling.

5. (Original) The printing apparatus in accordance with claim 4, the printing apparatus further comprising a control pattern producing section, which produces the predetermined control pattern in accordance with a shape of a non-transfer area to be formed on the printing medium.

6. (New) A retransfer printing method comprising the steps of:

overlapping an ink ribbon in a belt shape having both layers of a transfer ink layer containing transfer-ink and a peel functional layer thereon, on an intermediate transfer film in a belt shape having a transfer layer thereon so as to face the transfer ink layer toward the transfer layer;

moving the ink ribbon and the intermediate transfer film together to a longitudinal direction while pressing a thermal head against the back side of the ink ribbon overlapped on the intermediate transfer film;

transferring the transfer-ink to the transfer layer by heating the thermal head corresponding to an image to be printed so as to form the image composed of the transfer-ink on the transfer layer;

peeling off a part of the transfer layer adhered to the peel functional layer from the intermediate transfer film by way of adhering the part of the transfer layer corresponding to a peeling area previously designated within an area of the image to the peel functional layer by heating the thermal head corresponding to the peeling area over a predetermined temperature; and

re-transferring the transfer layer to the printing medium by the thermal transfer method, and resulting in printing the image on the printing medium,

wherein an amount of energy, which is supplied to the thermal head so as to heat the thermal head, is controlled in accordance with a location of the thermal head in the peeling area and its neighboring area during the step of peeling, and

wherein controlling an amount of energy is such that energy having a first value is supplied to the thermal head when the thermal head relatively moves from outside the peeling area to inside the peeling area in order to conduct a temperature of the thermal head to reach to a lower limit temperature at which the peel functional layer enables to exhibit peeling function before the thermal head relatively moves from outside the peeling area to inside the peeling area, and

wherein energy having a second value is supplied to the thermal head when the thermal head is in the peeling area in order to control a temperature of the thermal head not to exceed a temperature at which the peel functional layer fails to exhibit peeling function and not to fall below the lower limit temperature, and

wherein the first value is larger than the second value, and wherein the second value is larger than an energy value that is supplied to the thermal head prior to supplying the energy having the first value.

7. (New) The retransfer printing method in accordance with claim 6, wherein the location of the thermal head when the energy having the first value is supplied to the thermal head while

the thermal head relatively moves from outside the peeling area to inside the peeling area is only outside the peeling area excluding inside the peeling area.

8. (New) The retransfer printing method in accordance with claim 6, wherein the location of the thermal head when the energy having the first value is supplied to the thermal head while the thermal head relatively moves from outside the peeling area to inside the peeling area is whole area from outside the peeling area to inside the peeling area.

9. (New) The retransfer printing method in accordance with claim 6, wherein the energy value to be supplied to the thermal head prior to supplying the energy having the first value is designated to heat the thermal head while maintaining a temperature of the thermal head below the lower limit temperature at which the peel functional layer enables to exhibit peeling function when the thermal head is located outside the peeling area.

10. (New) A printing apparatus comprising:

transfer means for transferring a transfer-ink to a transfer layer by heating a thermal head corresponding to an image to be printed so as to form the image composed of the transfer-ink on the transfer layer by way of overlapping an ink ribbon in a belt shape having both layers of a transfer ink layer containing the transfer-ink and a peel functional layer thereon, on an intermediate transfer film in a belt shape having the transfer layer thereon so as to face the transfer ink layer toward the transfer layer, and moving the ink ribbon and the intermediate transfer film together in a longitudinal direction while pressing the thermal head against the back side of the ink ribbon overlapped on the intermediate transfer film;

peel means for peeling off a part of the transfer layer adhered to the peel functional layer from the intermediate transfer film by way of adhering the part of the transfer layer corresponding to a peeling area previously designated within an area of the image to the peel functional layer by heating the thermal head corresponding to the peeling area over a predetermined temperature;

re-transfer means for re-transferring the transfer layer to the printing medium by the thermal transfer method, and resulting in printing the image on the printing medium; and

control means for controlling an amount of energy, which is supplied to the thermal head so as to heat the thermal head, in accordance with a location of the thermal head in the peeling area and its neighboring area,

wherein energy having a first value is supplied to the thermal head when the thermal head relatively moves from outside the peeling area to inside the peeling area in order to conduct a temperature of the thermal head to reach to a lower limit temperature at which the peel functional layer enables to exhibit peeling function before the thermal head relatively moves from outside the peeling area to inside the peeling area, and

wherein energy having a second value is supplied to the thermal head while the thermal head is in the peeling area in order to control a temperature of the thermal head not to exceed a temperature at which the peel functional layer fails to exhibit peeling function and not to fall below the lower limit temperature, and

wherein the first value is larger than the second value, and

wherein the second value is larger than an energy value that is supplied to the thermal head prior to supplying the energy having the first value.

11. (New) The printing apparatus in accordance with claim 10, wherein the control means controls the amount of energy to be supplied to the thermal head for heating the thermal head in accordance with a shape of a non-transfer area to be formed on the printing medium.